

REMARKS

In response to the Official Action mailed October 5, 2004, Applicants amend their application and request reconsideration. In this Amendment, no claims are added and claims 3 and 9 are canceled, so that claims 1, 2, 4-8, and 10-16 remain pending. No new matter has been added.

Claims 1 and 7 are amended to include the limitations of canceled claims 3 and 9, respectively. Other amendments to the claims are made in response to the objections of the Official Action.

Priority Document

The Examiner is requested to acknowledge receipt of the Priority Document in the next communication. The Priority Document was filed with the application and appears in the Image File Wrapper under Foreign Priority Papers Filed.

Drawing Objections

The Official Action objects to the drawings under 37 CFR 1.83(a). The Official Action contends that the limitation “correcting unit determines the timer periodic correction value... indicated by the time stamp” of claim 14 is not shown in the figures. Applicants respectfully disagree, and direct attention to Figure 20 which plainly shows this limitation.

The Official Action further contends that the “third global timer” of claim 15 is not shown in the figures. Again, Applicants respectfully disagree, and direct attention to elements 13a and 13b of Figure 21, either of which satisfies the limitation “third global timer.”

The Official Action further contends that the “second transmitting unit” of claim 15 is not shown in the figures. This objection is moot in view of the amendment of claim 15.

§ 112, First Paragraph Rejections

The Official Action objects to the specification under 35 USC 112, first paragraph, for failing to disclose or describe a periodic timing time. The Official Action accordingly rejects claim 2 under 35 USC 112, first paragraph, for reciting the periodic timing time. The recitation of the phrase “periodic timing time” was made in error. The controllers transmit a synchronous timing time, not a periodic timing time, as disclosed in the patent application at page 20, line 20. Accordingly, claim 2 is amended so that the phrase “periodic timing time” is replaced with “synchronous timing time.” Thus, the rejection of claim 2 is now moot and should be withdrawn.

Claims 8, 15, and 16 are rejected under 35 USC 112, first paragraph, as failing to comply with the enablement requirement. The Official Action contends the limitation “said control period timer latches the global time of said first global timer in said latch unit at the synchronous timing of the periodic control designated by said control period timer” is not specifically found in the specification. Applicants respectfully disagree, and direct attention to Figure 17 and page 39, line 15 *et seq.*, which sufficiently describe latching by the control period timer.

The Official Action further asserts that the limitation “second transmitting unit” of claim 15 is not found in the specification. That rejection is moot in view of the amendment to claim 15.

§ 112, Second Paragraph Rejections

The Official Action rejects claims 2-14 under 35 USC 112, second paragraph, asserting that various claim limitations lack antecedent basis. Applicants note that the limitations cited in the Official Action were amended in the Preliminary Amendment filed with this application to correct the antecedent basis problems. Thus, all antecedent basis issues have been corrected, and the rejection is entirely moot.

The Official Action contends that the limitations “timer correction value” and “timer period correction value” are not specifically supported by the specification. Applicants respectfully disagree, and direct attention to page 34, lines 10-22 and Figure 12 of the patent application, where the timer correction value is described as the time difference between the global time of the global timers 13a, 13b at the local sync timing of the operation period timers 11a, 11b, and the synchronous (system sync) time indicated by the time stamp attached to the received periodic transfer packet 6. The timer correction value D12 is used to correct a time deviation between the control period indicated by the control period timer 10 and the operation period timers 11a, 11b. Regarding the phrase “timer period correction value,” occurrences of that limitation are deleted from all claims, as the “timer period correction value” is substantially the same as the “timer correction value.”

The Official Action contends that the limitation “synchronous timing time” is not specifically supported by the specification. Applicants respectfully disagree, and direct attention to page 20, line 15 *et seq.* of the patent application, where the synchronous timing time (referred to throughout the specification as “system sync”) is described.

§ 102 Rejection

The Official Action rejected claims 1-8 and 10-16 as anticipated by Voth (US Patent 6,351,821). That rejection is respectfully traversed.

Voth fails to teach every limitation of amended claims 1 and 7 and, therefore, cannot anticipate either of the two independent claims or the dependent claims. For example, Voth fails to teach that each device includes a correcting unit which corrects said operation period timer *by determining the time difference* between the global time indicated by said global timer of said device and the synchronous timing time indicated by said controller at the synchronous timing indicated by said operation period timer. The Official Action contends that Voth teaches this limitation; however, Voth plainly describes that calculation of time offset is performed by the Master Node and not the Slave Node, which the Official Action has construed as the “device” (see Figure 6, step 618 and column 6, lines 55-57 of Voth). Thus, each “device” in Voth fails to perform the determination of time difference as presently claimed. Because this determination is made by each device itself, and not by the controller or Master Node, the invention achieves the advantage of performing flexible communication such as large-size packet transfer and asynchronous communication between slaves, without requiring synchronization of periodic control by the periodic transfer timing packets, and without affecting the precision of synchronization because of network jitter.

Furthermore, Voth fails to teach every limitation of amended independent claim 15. Clearly, Voth fails to teach a controller having a first global timer controlled through said first network and a second global timer controlled through said second network. Voth discloses only one network, and says nothing of a controller having two timers controlled through different networks (see Figures 1 and 4 of Voth).

Thus, Voth fails to teach every limitation of amended claims 1, 7, and 15. Accordingly, the rejection of claims 1, 2, 4-8, and 10-16 is erroneous and should be withdrawn.

§103 Rejection

The Official Action rejects claim 9 as unpatentable over Voth in view of Strong et al. (US Patent 5,689,688, hereinafter Strong). That rejection is moot in view of the cancellation of claim 9.

In re Appln. of SUZUKI et al.
Application No. 09/841,102

Reconsideration and withdrawal of the rejections, as well as prompt allowance of the pending claims, are earnestly solicited.

Respectfully submitted,


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